

DOCUMENT RESUME

ED 375 674

FL 022 530

TITLE Feasibility Study of Statewide Implementation of the Fairfax County Elementary Foreign Language Immersion Program. Report of the Virginia Department of Education to the Governor and General Assembly of Virginia. House Document No. 26.

INSTITUTION Virginia State Dept. of Education, Richmond.

PUB DATE 94

NOTE 43p.

PUB TYPE Legal/Legislative/Regulatory Materials (090)

EDRS PRICE MF01/PC02 Plus Postage.

DESCRIPTORS Elementary Education; *Elementary School Curriculum; Feasibility Studies; Financial Problems; FLES; *Immersion Programs; Program Evaluation; Program Implementation; *Second Language Instruction; *Second Language Programs; State Legislation; *State Programs; Teacher Education; Teacher Shortage

IDENTIFIERS *Fairfax County Schools VA

ABSTRACT

This report examines the efficacy of implementing Fairfax County's elementary language immersion program on a statewide basis in Virginia. The report discusses the current state of elementary foreign language programs in the state, and describes the Fairfax County immersion program for grades one through six. It then presents an evaluation of the immersion program, and the availability of staff and instructional materials for the implementation of such a program on a statewide basis. Finally, it considers policy and fiscal implications of statewide implication. The report concludes that while the Fairfax program is highly effective, and the implementation of a foreign language immersion program on a statewide basis would be highly desirable, current conditions preclude the adoption of such a program. Current fiscal constraints throughout Virginia and the apparent inability to locate a sufficient pool of teacher applicants needed for statewide implementation are major limiting factors governing the consideration of such a program. Eight appendixes provide information on the Virginia House Joint Resolution governing the feasibility study, the workplan for the study, state foreign language enrollments, the status of foreign language immersion programs, and state-approved teacher preparation programs. (MDM)

* Reproductions supplied by EDRS are the best that can be made *

* from the original document. *

ED 375 674

REPORT OF THE
VIRGINIA DEPARTMENT OF EDUCATION

Feasibility Study of
Statewide Implementation of
the Fairfax County Elementary
Foreign Language Immersion Program

TO THE GOVERNOR AND
THE GENERAL ASSEMBLY OF VIRGINIA



HOUSE DOCUMENT NO. 26

COMMONWEALTH OF VIRGINIA
RICHMOND
1994

BEST COPY AVAILABLE

PERMISSION TO REPRODUCE THIS
MATERIAL HAS BEEN GRANTED BY

J. E.
Foudriat

TO THE EDUCATIONAL RESOURCES
INFORMATION CENTER (ERIC)."

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION
CENTER (ERIC)

This document has been reproduced as
received from the person or organization
originating it.

Minor changes have been made to improve
reproduction quality.

Points of view or opinions stated in this docu-
ment do not necessarily represent official
OERI position or policy.

2 BEST COPY AVAILABLE

Preface

In response to House Joint Resolution No. 681, introduced by Delegate James K. O'Brien, Jr., of Clifton, and passed by the 1993 Virginia General Assembly, the Department of Education appointed a team to examine the **Feasibility of Statewide Implementation of the Fairfax County Elementary Foreign Language Immersion Program**. The team consisted of the following individuals:

David Cox, Foreign Language Specialist, Virginia Department of Education, (Team Leader);
Judith Shrum, Professor, Foreign Language Education, Virginia Polytechnic Institute and State University;
Martha Abbott, Foreign Language Coordinator, Fairfax County Public Schools;
Helen Jones, Foreign Language Specialist, Virginia Department of Education;
Patty Pitts, Teacher Licensure Associate Specialist, Virginia Department of Education;
Gwendolyn Young, Teacher Certification Analyst, Virginia Department of Education.

The report was also reviewed by:
Kathy Panfil, Principal, Key Elementary School, Arlington County;
Helen Warriner-Burke, Retired Foreign Language Specialist,
Virginia Department of Education.

A copy of the General Assembly Resolution and the official workplan for this team project (RFP 93-23) are attached as Appendices A and B.

The team is pleased to present this report with recommendations to the members of the 1994 General Assembly and wishes to commend Delegate O'Brien for his interest in the education of our youth and, in particular, for his desire to see the many benefits of foreign language immersion programs made available to students across the state.

**Feasibility Study of Statewide Implementation of the
Fairfax County Elementary Foreign Language Immersion
Program**

	Page
Preface	1
Table of Contents	2
Executive Summary	3
Introductory Chapter	8
Chapter I Current Status of Elementary Foreign Language Programs in Virginia	13
Chapter II Description of the Fairfax County Immersion Program	16
Chapter III Evaluation of the Fairfax County Immersion Program	18
Chapter IV Availability of Staff and Instructional Materials for Immersion Programs	22
Chapter V Policy Implications of Statewide Implementation	27
Chapter VI Fiscal Implications of Statewide Implementation	29
Appendices	31

Executive Summary

Because of the enviable success of the Fairfax County elementary foreign language immersion program, the project team was charged with the responsibility of determining the feasibility of implementing this unique program statewide. After examining the current status of elementary foreign language offerings across the state and the limitations associated with statewide adoption of an immersion program, the team concluded that such action was not feasible at this time. Current fiscal constraints throughout Virginia and the apparent inability to locate a sufficient pool of teacher applicants needed for statewide implementation were major concerns that led team members to this decision. Nevertheless, the team felt that there were viable options including the establishment of a limited number of state-funded pilot immersion sites, across the Commonwealth, possibly one each in the eight superintendents' educational regions.

Current Status of Elementary Foreign Language Programs in Virginia

During the 1992-93 school year, 42 of 133 school divisions offered some form of an elementary foreign language experience in at least one of their schools. There was considerable variation (e.g., purpose, frequency of instruction, curriculum fit) in the particular approach used; however, what was particularly striking was the number of school divisions with no elementary foreign language experience. This does not mean that the localities were not interested in such opportunities for their students; they simply lacked the resources to expand the existing foreign language program.

Description of the Fairfax County Public School Immersion Program

The partial immersion option selected by Fairfax County officials provides instruction in grades 1-6 for half the day in a foreign language (math, science, health) and the other half in English (language arts, social studies). During the foreign

language half of the day all communication is in Spanish, French, or Japanese. When necessary, gestures and visuals are used to enhance communication. In 1989-90 eight schools were selected as pilot sites: four Spanish-English, three Japanese-English, and one French-English. All interested students were eligible and encouraged to participate. Long-range plans call for students to continue language study through grade 12.

The uniqueness of an immersion program is that foreign language is not taught per se but is the medium of instruction. Students learn the language subconsciously through interesting and meaningful activities in the foreign language.

Evaluation of the Fairfax County Public School Immersion Program

The partial immersion program (grades 1, 2) was evaluated after two years. Results were impressive. There was no evidence that conducting class half a day in a foreign language jeopardized or slowed down learning. Immersion students scored as well, and in some instances, better than students in the control groups. Foreign language proficiency reached level 14 on a 0-25 scale with a native speaker rated at 25.

Although parents, principals, and teachers were satisfied with the program, some parents of non-participating students were concerned about the immersion program's impact on non-immersion classes. This is to be expected given the newness and pilot status of the program. Further, on the same survey, seventy-seven percent of the non-immersion parents indicated satisfaction with their decision not to enroll in the program.

Availability of Staff and Instructional Materials

The greatest obstacle to implementation of an immersion program statewide is the difficulty in securing adequate numbers of qualified teachers. For the less-commonly taught languages, such as Japanese, Russian, and Arabic, it would be virtually impossible. Only three of the 29 institutions of higher education that offer teacher-preparation programs in foreign languages offer specialization in elementary foreign language learning and, of

those three, none offers a training program for the prospective immersion teacher (as opposed to other elementary options). Only George Mason University, through its bilingual education teacher training program, offers extensive preparation in immersion learning. Resolving matters related to the United States immigration policy continues to pose problems for personnel officers in their recruitment of teachers from abroad.

The acquisition of instructional materials is no longer a problem for French and Spanish immersion programs. One does encounter some difficulty, however, in locating sources of materials for the less-commonly taught languages.

Policy Implication of Statewide Implementation

No issue is more important in planning and implementing any foreign language program than the recognition of the need for a long-term commitment. It is advisable that local officials discuss publicly the importance of remaining firm in their commitment of at least five years or more if the program is to achieve its greatest potential.

Other issues, including the choice of the foreign language, selection of staff, and program continuity, must be addressed. In particular, middle school foreign language programs must focus on accommodating students whose level of foreign language proficiency does not fit the regular middle school foreign language program. With the present emphasis on site-based management, some consideration must be given to potential problems of articulation between different sites as students transfer to other schools or move up to the next level of education, i.e., elementary to middle.

Fiscal Implications of Statewide Implementation

Once in operation, immersion programs are the least expensive of elementary foreign language options. Additional monies would be required, however, for startup activities, continuation and expansion. Given the current financial climate across the state,

it is questionable whether localities are in a position to absorb additional substantial expenditures at this time (approximately \$10,000 per year). Given also the fiscal tightness of the state budget, it is unlikely that large sums of money can be found at this time to fund such a program statewide (approximately \$1,330,000 per year). This is not to discourage, however, any locality that desires to implement such a program on its own, nor does it eliminate the possibility of establishing a limited number of pilot sites across the state.

Recommendations

Although the project team recognizes that the immersion approach has great merit, it does not believe that statewide implementation of the Fairfax County Immersion Program is feasible for reasons stated in this study. Members do recommend that:

- limited implementation be pursued with pilot sites selected at strategic localities across the state, perhaps one within each of the eight superintendents' educational regions. Interested local school divisions would be encouraged to work jointly with a nearby institution of higher education in the planning and implementation of the immersion program. Further, three-year grants of \$30,000 per site should be available to support these efforts. Consideration should be given to establishing pilot programs in rural or less cosmopolitan sites to determine to what extent replication is possible in the less populous parts of the state. This initiative would be supported with a series of workshops addressing issues such as setting standards for teacher-preparation programs for immersion teachers, selection of staff, curriculum development, and selection of materials. These workshops would be a collaborative effort between the Department of Education, institutions of higher education, and local school divisions.

- the Department of Education sponsor a statewide institute on elementary foreign language options for interested local educators.
- the Department of Education prepare a publication to assist local school divisions in selecting and implementing an elementary foreign language program.

Introductory Chapter - Overview of Foreign Languages in Virginia

Virginia's foreign language program has long been recognized as one of the premier programs in the country. Contributing significantly to this status are:

- impressive secondary enrollment figures,
- proficiency-oriented instruction that was emphasized long before the movement became a national trend,
- an advanced studies foreign language requirement that is among the most rigorous anywhere,
- a minimum offering of three years of a foreign language in every high school across the state,
- at least one foreign language available to every middle school student, and
- an overwhelmingly successful summer residential foreign language academy program that, to the best of our knowledge, does not exist elsewhere.

Strong secondary enrollments have always been a strength of foreign languages in Virginia. For the 1992-93 school year, 46% of the students in grades 8-12 were studying a foreign language, the same as the previous year which was the highest ever. Of this group pursuing languages, 57% are studying Spanish, 25% French, 9% Latin, 6% German, 0.5% Japanese, 0.5% Russian, and 2% in Introduction to Foreign Language. One notable trend over the last several years has been the dramatic growth in Spanish. (See Appendix C.)

Virginia's advanced level statistics are also exceptional. Although large numbers of students at levels I and II are impressive, strong numbers in levels III-VI are more meaningful and indicate a greater commitment on the part of Virginia's students to achieve meaningful proficiency in the language. It is important to note also that there are many other students who have

already completed their foreign language study in previous years and whose numbers are not included in these percentages.

The governor's foreign language academies, three of which are total immersion experiences, offer a truly unique opportunity for the state's talented language students. Several of the academies have been the subject of media reporting across the state and nation with a CBS Morning News segment several years ago devoted to the German Academy. This past summer, USA Today featured the French and Spanish academies in a special supplement on innovative second-language programs across the country. Articles about the German Academy have appeared in the German press. The academies have also been the focus of several articles in foreign language professional publications.

Elementary foreign language study is not new to the Commonwealth; although, historically, it has not been one of the stronger facets of foreign language education in Virginia. During the sixties, in spite of relatively strong secondary foreign language enrollments that exceeded national percentages, foreign language in Virginia's elementary schools enjoyed only slight success--only a half-dozen formal elementary programs came into existence. By the mid-seventies, they were gone, mostly a result of budget cuts and the "Back to the Basics" movement.

In 1981, York County added an early morning before-school foreign language program to its elementary curriculum and, in 1984 Radford City Public Schools incorporated elementary foreign languages into its program. Henrico County pioneered in the development of a foreign language exploratory program, Students Understanding Neighbors (SUN). Initiated in 1986 and taught by the regular elementary teacher, the program focuses heavily on foreign cultures with limited language development. The SUN program continues today, having been influential in the establishment of a number of foreign language exploratory programs across the Commonwealth. Another widely implemented elementary foreign

language program is Elementary Language Fundamentals (ELF). This variation of FLES was developed in the late eighties, spearheaded by Roanoke College in collaboration with Virginia Tech and several local school divisions. It is currently in use in over 50 Roanoke area schools.

With the study of foreign language a part of former President Bush's education program and a key component of President Clinton's Goals 2000, together with a growing recognition of the increasingly interdependent nature of the world today, interest in elementary foreign language programs has been re-ignited and, in Virginia, immersion programs have been implemented in ten schools in Fairfax County, three in Arlington County (including the state's first immersion program established in 1986 at Key Elementary School), and one in Alexandria City. Prince William County is planning such a program for the 1994-95 school year and Henrico County is one of a handful of localities across the nation with a high school foreign language immersion program. (See Appendix D.) The benefits of acquiring a second language in an immersion setting are unparalleled and, certainly, in better fiscal times, even more localities would be moving toward sophisticated second-language offerings such as these.

It is important also to point out the critical role played by the Commonwealth's institutions of higher education. At the university level, foreign language offerings are available in more than 20 different languages, from Arabic to Urdu. Twenty-nine of these institutions offer teacher-training programs in one or more foreign languages. More than ever before college and university professors are reaching out to assist teachers in the public schools--serving as regional resources, instituting special summer offerings, and participating in statewide professional meetings which serve to strengthen university/public school relationships.

Virginians have every right to be proud of what the state's foreign language profession has accomplished. As the state and

the nation move forward in preparing today's youth for a global society, more and more local school divisions are looking at the next logical step--extending foreign languages down into the lower grades.

Types of Foreign Language Programs

For the purpose of clarification, the three basic types of elementary programs referenced in this study are **FLES**, **FLEX**, and **partial immersion**. Briefly, they are described as follows:

FLES (foreign language in the elementary schools) is taught by a foreign language teacher for a specific number of hours per week with emphasis on oral communication first with reading and writing following at an appropriate time. The instructor is an itinerant going into classrooms on a regular schedule each week. The typical program provides 1 to 1.5 hours of instruction per week (twenty to thirty minutes every other day).

FLEX (foreign language exploratory) is carried out by the regular classroom teacher who may or may not know a foreign language but strives to internationalize the regular curriculum by enriching it with cultural and minimal language activities. There is no concerted effort to develop a significant degree of proficiency in any language.

Partial immersion is the most intensive of the three with functional fluency at an early stage as its goal. The uniqueness of an immersion program is that the foreign language is not taught as a subject. Instead, the foreign language becomes the language of instruction for part (approximately one-half) of the day. The foreign language is acquired subconsciously through meaningful activities in the language as the child learns concepts of the various content areas included in the elementary curriculum. The earlier an immersion program begins, the better. Students are immersed in the target language for approximately 15 hours per week. (Variations of immersion programs exist at the middle and high school levels. In fact, Virginia's highly successful

Governor's French, Spanish, and German academies for advanced students are total immersion programs.)

Chapter I - Current Status of Elementary Foreign Language Programs in Virginia

The Department of Education maintains no more than cursory records on elementary foreign language programs. Local programs tend to be too diverse in organization and purpose to provide consistent and meaningful information. Consequently, for the purpose of this study all local public school divisions were surveyed in July 1993 by telephone by team members to ascertain what type of elementary foreign language programs (K-5), if any, were in place during the 1992-93 school year. Information gathered varied considerably from partial immersion programs to elementary foreign language instruction by satellite to, in most localities, no offering at all.

Slightly less than one-third or 42 of 133 school divisions offered some variation of FLEX, FLES or partial immersion. (See Appendix E.) A few localities offered more than one option. It was not uncommon for respondents to indicate that FLES or FLEX had been offered in previous years but had been dropped because of budget or staffing related problems. Some indicated a desire to implement a program in the near future.

Within the 42 school divisions, most programs were adaptations of the FLEX approach which stresses cultural enrichment with minimal language development. FLEX is popular because it can be taught by the regular elementary classroom teacher who need not have necessarily studied a foreign language. Usually videos and audio tapes are used to introduce students to limited amounts of the foreign language. This new vocabulary is then integrated into the regular elementary classroom where possible in order to reinforce previously introduced concepts and to provide an opportunity for students to use the foreign vocabulary in a meaningful way.

Specifically, the survey revealed the following information. (Note that some school divisions have several different types of programs; therefore, the total for a particular category may be greater than 42--the number of local school divisions with elementary programs.)

TYPE:

FLEX - 24 FLES - 20 Partial Immersion - 3

WHEN:

In-school - 27 Before/after school - 15 Summer - 3

LANGUAGE:

Spanish - 35 French - 31 German - 8 Latin - 6
Japanese - 5 Russian - 5 Chinese - 2 Italian - 1

ENROLLMENT CRITERIA:

Open to all - 32 Selective - 13

STAFFING:

Paid - 28 Volunteers - 22

Also of note:

- Programs served all grade levels, K-5;
- Frequency of instruction varies from daily to weekly;
- Most students participated at no cost although there were occasions when tuition was charged;
- Some programs utilized both university and high school foreign language students as teachers.

For the most part, factors determining the type and structure of the elementary program were: availability of staff, availability of financial resources, and curriculum fit.

In summary, less than one-third of the localities (42 of 133) are currently offering some form of an elementary foreign language program. There is great variation in the way that the FLEX and FLES options are organized within the local school division. FLEX is the most popular approach although a significant number of schools have selected FLES. Many other localities are interested but lack resources to turn interests and hopes into elementary foreign language curricula.

Chapter II - Description of the Fairfax County Immersion Program

In keeping with recommendations of recent national educational reports and national professional associations to initiate programs that would better enable tomorrow's students to find success abroad in an increasingly interdependent marketplace and at home amidst an increasingly multilingual environment, together with a high level of interest among the community to implement an innovative elementary foreign language program, the Fairfax County School Board approved a proposal for a pilot immersion program in March, 1989.

Fairfax County curriculum specialists opted for an immersion approach after reviewing research that indicated that second-language learning at an early age had a positive effect on intellectual growth, and left students with more flexibility in thinking, greater sensitivity to language, and better listening skills. Further, the earlier and more sustained the instruction, the greater the level of proficiency attained and retained by the students. Additional research specific to immersion programs convinced local officials that a partial immersion approach was the most feasible considering the interests of parents and the time, costs, and benefits for the students.

In the Fairfax County partial-immersion model, the subjects of math, science, and health are taught by one teacher in the foreign language; language arts and social studies, by a second teacher in English. The two teachers work together as a team to instruct two groups of students, one group during each half of the school day. The teachers plan the implementation of the curriculum together to ensure integration of concepts taught during both portions of the school day.

The program currently is in operation in grades 1-6 in three schools and grades 1-5 in seven schools with over 1,700 students.

Immersion research indicates that all students can succeed in an immersion class. Consequently, students of varying interests and abilities were encouraged to participate. In schools where the demand to enroll was greater than the number of slots, a lottery system was set in place. Decisions pertaining to the selection of a particular language were left to each school and were made based on staffing availability and school/community interest.

A vital part of the planning for the immersion program was accessibility to staff training for teachers and school administrators. George Mason University received a federal grant to provide training for teachers of immersion programs and Fairfax County became the primary beneficiary of the grant monies during the pilot stage of the program. Assistance from George Mason included a training course that was gratis to teachers and foreign language staff in the first year and a summer institute for teachers and principals of the pilot sites during the first two years. Although the federal grant was not renewable, George Mason University has continued the teacher training program for immersion and bilingual education teachers.

Chapter III - Evaluation of the Fairfax County Partial Immersion Program

Student Achievement

Research indicates that students in partial or total immersion programs do not achieve academically at the same rate during the first two or three years of the program as students learning in their native language. After the second or third year, however, students catch up and by the fifth year are outperforming comparison groups. These immersion students remain high achievers throughout their school experience.

After two school years the Fairfax County immersion program was evaluated and achievement of students was impressive. Data were collected in the Spring of 1991 on 719 students. Achievement was measured in the areas of mathematics, reading, and foreign language proficiency using the Fairfax County-developed Program of Studies (POS) Mathematics Test, the Metropolitan Achievement Test (MAT), and the Student Oral Proficiency Rating (SOPR).

In mathematics, the immersion students did at least as well as or better than the comparison group in all three grade levels in which the immersion program was implemented for 1989-1991. In addition, the immersion group achieved at levels higher than the Fairfax County mean on all levels of the POS Math tests for grades 1 and 2. Since all math instruction was given in the target foreign language, and most students had no proficiency in the target foreign language at the beginning of the program, the fact that there was no significant difference between the performance of the immersion students and the non-immersion students on the math POS test is remarkable. In the first two years of the program, Fairfax County's immersion students have performed at levels higher than research indicates immersion students normally perform in implementation stages. Usually, significant gains are not seen until the third or fourth year of a program.

On the Metropolitan Achievement Test (MAT) the immersion students strongly outperformed both the comparison group and the Fairfax County average, with the immersion students scoring at the 80th percentile on the grade 2 MAT, the comparison group at the 72nd percentile, and the Fairfax County mean at the 74th percentile. That is a significant difference, with the immersion students about one-fourth of a standard deviation above the achievement of the comparison group and the Fairfax County mean.

This, too, is a highly significant accomplishment for the immersion students, as they only receive half of their daily instruction in the English language. The results support many other research studies which show that developing bilinguals typically become metalinguistically aware at an earlier age and are able to use the knowledge gained from the process of developing a second language to analyze their own first language. Thus, even though the immersion students receive less formal instructional support in English, they can apply the knowledge they gain in the foreign language to analysis of their first language.

The Student Oral Proficiency Rating (SOPR) demonstrates the immersion students' progressive development of their oral skills in the foreign language. In September 1989, all of the English-speaking students were at 0 proficiency level on the SOPR rating scale of 0-25, with no proficiency in the foreign language. By the end of the first year of instruction, during which they acquired the second language through lessons in math, science, and health with no explicit teaching of the foreign language, the immersion students had reached the average score of 8.1 on the SOPR. At this level (Level 2, ranging from 6-10 on the SOPR), the immersion students could comprehend social conversation, teacher directions, and follow general activities in the foreign language. At Level 2, they began to emerge from the silent period (a stage in child second-language acquisition when the child is acquiring rapid listening comprehension skills in the foreign language but

is not yet ready to begin producing the language at any significant level; the silent period can last anywhere from 3 months to one year). At Level 2, as the immersion students began to experiment with speaking in the foreign language, although they made many errors in speech (to be expected at this natural development stage), they started to use the language more and more.

By October of the second year of instruction, the students had begun moving into Level 3, which is the mid-range of proficiency development, with a score on the SOPR of 11-15. By the end of the second year of instruction, they reached the upper end of Level 3. At this level, they understood most of what was said, participated significantly in speaking in the foreign language, with mastery of quite a range of vocabulary needed for the math, science, and health activities of the curriculum, and they were expected to and continued to make grammatical errors, which most of the time, did not affect the flow of communication. At this level, the students were more than halfway towards development of native speaker oral proficiency.

Parent/Teacher Surveys and Principals' Interviews

Just over 90% of parents surveyed indicated that they were satisfied or very satisfied with the program. Parents were overwhelmingly supportive and had received adequate background information to help them make a decision about enrolling their child. They also were pleased with the support of the principal for the program and with the quality of instruction both within the foreign language curriculum as well as those components taught in English.

Among parents surveyed who opted not to have their students participate in the immersion program, most indicated that their reservation centered on their concern about achievement in math and science. It is interesting to note that 23.1% (of 488) felt that the immersion program had impacted negatively on the school's

educational program. This is not particularly surprising given the innovative nature of the program and the amount of publicity attracted by immersion classes. Noteworthy also is the fact that on the same survey, 77% of the non-immersion parents were satisfied with their decision not to enroll the child in the program.

Although teachers were generally satisfied with the teaming approach to instruction, their preparation to teach in an immersion environment, the visitor policy, and the opportunity to grow professionally, there was some dissatisfaction with the availability of materials. Of those teachers who did not participate in the immersion program, 43.3% felt that the program had had a negative impact on those students with special needs (LD,GT) in the non-immersion classes.

Principals were unanimous in their support for the program and felt that it was an excellent way to learn a foreign language while learning math, science and health.

The results of the research are encouraging if not impressive. Immersion students overall did as well as non-immersion students and in some instances better; at times, significantly so. There was no indication that students were behind in their academic or cognitive development and, in fact, performance in English and the content areas had been enhanced.

[Evaluation information is excerpted from Partial-Immersion Foreign Language Pilot Program: Evaluation Report, Fairfax County Public Schools, October, 1991. See Appendix F.]

CHAPTER IV - Availability of Staff and Instructional Materials

The capability of implementing an innovative program with no additional staffing is a major advantage of immersion over other forms of elementary foreign language programs, such as FLES and, to some extent, FLEX. While FLES and FLEX, when not taught by the regular elementary teacher, represent add-on programs that require additional and usually itinerant staff, immersion teachers are regular elementary-licensed staff who also have proficiency in a second language. Instructional content does not change but the medium of communication does for half the day. For immersion programs the bulk of responsibility at the local level does not lie on the school division's finance office but on the shoulders of the members of the personnel office who must locate applicants with oral proficiency in both English and foreign language and who meet current state and sometimes federal (immigration) requirements.

In general, availability of elementary teachers who meet program and licensure requirements varies from limited to virtually non-existent. Because of the large Hispanic population of this country, success in locating English/Spanish teachers is good; however, for less-commonly taught languages, (Japanese, Russian, Arabic) it is exceedingly difficult, frequently impossible.

Fairfax County experienced little difficulty during the first year in locating eight teachers (4 Spanish, 3 Japanese, 1 French); however, finding sufficient numbers of applicants for the second year from which principals could select staff proved to be a problem. Only after an intensive nationwide recruitment effort was the pool of applicants of sufficient size to enable the eight schools to begin the second year fully staffed.

Arlington County and Alexandria City were able to begin the current academic year with their four Spanish/English immersion programs fully staffed but not without encountering some difficulty.

Locating immersion staff that qualify readily for state licensing has not always been easy. Until recently, state teacher licensure regulations addressed only secondary foreign language programs. There were no specific provisions for teaching foreign language at the elementary level since there were few such programs. It was felt to be in everyone's best interests to let the few local school divisions affected set their own language-related requirements if they wished.

With the recent restructuring of the state's teacher preparation programs, institutions of higher education are permitted some latitude within broad State Board of Education guidelines in determining teaching areas (e.g., French 8-12, Spanish K-12) for which the university wishes to prepare teachers. They are also free to determine the content of these preparatory programs.

In July, 1993, the State Board of Education approved a set of regulations for individuals pursuing the "alternate route" to licensure. The alternate option was expanded to include elementary as well as secondary education and is available to individuals employed by a Virginia education agency who seek teaching endorsement at the K-12 level. The alternate route allows employed individuals who have earned a baccalaureate degree in the arts or sciences and who have met specific endorsement requirements for the teaching area sought to be issued a provisional license. (During the provisional period of the license, the individual must satisfy the professional teachers' assessment requirement and professional studies requirements.) An elementary foreign language endorsement provision has been added to these regulations.

According to the Department of Education's publication, State Approved Teacher Preparation Programs for Instructional Personnel in Virginia Colleges and Universities, three of 29 colleges or universities offer foreign language certification for grades K-5: Christopher Newport College, Eastern Mennonite College and Virginia Polytechnic Institute. (See Appendix G.) For the most part, however, these programs focus on FLEX and FLES. Only George Mason University offers extensive preparation for immersion programs and this coursework is a part of its bilingual education curriculum. This is partially the result of George Mason's location and interest in establishing a teacher training relationship with the Fairfax County immersion program. Two other institutions address immersion options (along with FLES and FLEX) in their methods courses; however, in most instances, there is no set elementary foreign language immersion curriculum to follow. Also, a complication of an immersion preparatory program is the inability to provide a *practicum* or student-teaching experience.

In an effort to obtain the most recent views and opinions of foreign language teacher-preparation personnel about elementary foreign language programs and, in particular, about plans relating to immersion, representatives of 16 of the 29 colleges and universities were contacted. (See Appendix H.) There was frequent enthusiasm and interest noted during the contact with the institutions; however, only Mary Washington College was investigating the possibility of adding an immersion model to its teacher-preparation program.

Although compliance with state requirements has created problems in the past, policies and practices are currently in place to both protect the integrity of the state's teaching profession and facilitate the hiring of staff for local innovative foreign language programs. The Department of Education has also worked closely with the Fairfax County Public Schools to assist in the licensing of individuals employed in the immersion program.

Retraining of existing secondary-endorsed foreign language teachers is an option; however, non-elementary licensed teachers must secure appropriate elementary credentials. This option would not significantly improve availability in the less-commonly taught languages as there are so few teachers of these languages to begin with. Likewise, it may not be feasible in Spanish as there are currently spot shortages at the secondary level for teachers of Spanish.

Recruitment of trained teachers from other countries is a possibility and certain foreign countries are actively involved in the placement of young graduates in American schools. This is not a long-term solution because of visa restrictions and a general desire on the part of the visiting teacher to return to the home country after one or two years. Teachers with no experience with the American culture and system of education must also receive additional training upon arrival.

In summary, staffing availability for statewide implementation of the immersion program poses serious problems. Even for the handful of programs currently in operation, locating qualified applicants is a challenging task. With so few elementary foreign language teacher training programs across the state, higher education is not in a position to supply a pool of applicants at this time. There do not seem to be any promising alternative sources either. It should be noted, however, that any college or university seeking to add elementary level certification to its foreign language teacher-preparation program can submit a proposal to the Department of Education requesting permission to do so.

Materials

Availability of materials varies according to language. Because of the relatively large Hispanic population and the existence since the early 70's of bilingual English/Spanish programs, one encounters little difficulty with the acquisition of Spanish language materials. For French, Canada serves as a fertile resource. For less-commonly taught languages, materials are still relatively difficult to find even for non-immersion secondary programs. Much of what Fairfax County has used in Japanese has been the result of much work by school staff to prepare instructional materials. This remains a problem area. It should be noted, however, that the Japanese government has been more than generous in its support of the immersion program donating a wide variety of materials and equipment to support instruction in the classroom.

Chapter V - Policy Implications

There are several policy issues to be addressed, none more important than local commitment. Second-language acquisition (like first-language) is a long-term process. For their students to best benefit from the potential of an immersion program, local officials must be prepared to make a multi-year commitment to any proficiency-oriented foreign language program, elementary or secondary. Insufficient planning, together with mild support, have doomed many elementary foreign language programs in the past. Local officials must recognize that without continued resources (human and financial) over a minimum five-year period for an immersion program, the results will be less than optimum. It is imperative that the importance of such a commitment be recognized by local board members, administrators, teachers, parents, patrons and others who share an interest in an immersion program.

Which foreign language? What are the immediate and long-range ramifications of selecting a particular language? Are there existing bilingual staff within the local school division? Consideration must also be given to these issues and to community interests as well as the content and structure of the existing K-12 foreign language program.

In the past, state teacher-preparation programs have focused virtually exclusively on secondary foreign language education. Only within the last few years has any attention been given to training the elementary foreign language teacher and those programs concentrated mostly on FLEX and FLES which represent the great majority of elementary foreign language programs in Virginia. Therefore, securing properly licensed teachers will most likely necessitate a departure from standard recruiting and hiring practices. It may be necessary to attend job fairs in nearby states and advertise in major journals and newspapers nationwide to locate potential applicants. Content of teacher-preparation curricula varies from institution to institution.

Local officials should have a firm understanding of the goals of immersion instruction and precisely what they desire in applicants' credentials.

In some states, local education agencies have entered into agreements with foreign educational institutions and governments. After locating potential applicants, the local school division may need to work closely with the Department of Education's teacher licensing officials to secure appropriate teaching licenses. The Department of Education is quite eager to cooperate with local officials to ensure that the integrity of the licensing process is protected and local initiatives are not unnecessarily impeded.

Consideration must be given to total foreign language program continuity when implementing an immersion program at the elementary level. Once immersion students reach the middle-school level, how will they be integrated into the secondary foreign language program? Will there be a separate program? Is the Advanced Studies Diploma requirement of three years of one foreign language or two years of two languages applicable to the immersion student or is there a waiver or proficiency level certification that would satisfy such requirements?

Attention must also be given to the issues of student attrition within the immersion program and placement of new students into the program.

These are all important issues that must be addressed for successful implementation of a K-12 foreign language program. Preparing students for a truly global society is both complex and challenging. It will cost money and it will require careful coordination. The responsibility of implementing a successful immersion program must not be taken lightly.

Chapter VI - Fiscal Implications

Considering the innovative nature of these programs, the cost of implementing an immersion program is not unreasonable. This is true primarily because the need for additional staff is small or non-existent. Unlike FLES and to some extent FLEX, major expenses fall into the categories of staff training, materials, curriculum development, and evaluation.

Based on information reported by the Fairfax County Public Schools and discussions with Alexandria City and Arlington County school officials, average annual costs associated with phasing in an elementary partial immersion program (K-5, one class for each grade) break down as follows:

- \$2,500 - Staff Development
- \$2,500 - Curriculum Development
- \$2,000 - Materials
- \$2,000 - Evaluation
- \$1,000 - Miscellaneous
- \$10,000 - TOTAL

After full implementation at the end of grade 5, costs are reduced considerably, being mostly maintenance in nature. Therefore, to adopt the program statewide (one school per school division) would cost approximately \$1,330,000 **per year** (133 X \$10,000).

Given current financial realities across the state and staff constraints previously discussed, the team recommends that a series of up to eight pilot sites be funded with three-year state grants of \$30,000 per site. One site per superintendents' region is proposed. Of course, local divisions must be prepared to assume full responsibility for the program after year three. Continuation of the program as a public/private partnership or a joint venture with an institution of higher education is a possibility that

would lessen the financial burden on localities. Such combinations of resources are highly recommended.

Institutes and workshops, sponsored and organized collaboratively by the Department of Education, institutions of higher education and local school divisions, would be available to assist local pilot sites with staff selection, staff training, curriculum development, and so forth. They would also provide a forum for discussion of standards for developing immersion teacher preparation programs for which there would be considerable need. There is an extraordinary degree of immersion-related expertise and experience in the Virginia, Maryland, and Washington, D.C. region. These resources would be used extensively in organizing institutes and providing assistance to the pilot sites. It is estimated that an additional \$3,500 per year (for three years) would be needed for institutes and workshops.

A Department of Education publication focusing on planning and implementing elementary foreign language programs is also proposed at a cost of \$3000.

Appendices

House Joint Resolution No. 681	A
Workplan: RFP 93-23	B
Virginia Foreign Language Enrollments	C
Immersion Programs ... Status Report	D
Elementary Foreign Language Programs	E
<u>Partial-Immersion Foreign Language Pilot Program</u>	F
State-Approved Preparation Programs	G
Institutions of Higher Education Surveyed	H

1993 SESSION

LD9360286

HOUSE JOINT RESOLUTION NO. 681
AMENDMENT IN THE NATURE OF A SUBSTITUTE
(Proposed by the House Committee on Rules
on February 6, 1993)

(Patron Prior to Substitute—Delegate O'Brien)

Requesting the Department of Education to study the feasibility of expanding the Fairfax County Foreign Language Immersion Program to school divisions throughout the Commonwealth.

WHEREAS, pursuant to Standard 1 of the Standards of Quality articulated in § 22.1-253.13:1 of the Code of Virginia, local school boards are to develop instructional programs emphasizing, among other things, knowledge of foreign languages and international cultures; and

WHEREAS, in September 1988, Fairfax County implemented a new program for foreign language instruction on a pilot basis in eight elementary schools, based on highly successful language immersion programs implemented in Canada and the United States during the last two decades; and

WHEREAS, this special immersion program offers a unique approach to foreign language instruction, as the language is not taught as a subject but becomes the language of instruction in part of the overall curriculum; and

WHEREAS, the goals of the immersion program include not only mastery of a second language but also the development of communicative and academic proficiency, multicultural awareness, and a global perspective; and

WHEREAS, a formal evaluation of the Fairfax Language Immersion Program, conducted in 1991, revealed that the math scores of immersion students equalled or surpassed those of the comparison group and that the immersion students "strongly outperformed" the comparison group in reading tests; and

WHEREAS, although the expansion of such a unique instructional program might enhance learning opportunities for students throughout the Commonwealth, additional study is necessary to assess the feasibility of such expansion; now, therefore, be it

RESOLVED by the House of Delegates, the Senate concurring, That the Department of Education be requested to study the feasibility of expanding the Fairfax County Foreign Language Immersion Program to school divisions throughout the Commonwealth. In conducting its study, the Department shall consider, among other things, the 1991 evaluation of the Fairfax program; the operation of current foreign language programs in the public schools; enrollment criteria and staff requirements for the immersion program, and the fiscal and policy implications of expanding this program throughout public schools in Virginia.

All agencies of the Commonwealth shall, upon request, assist the Department in the conduct of its study.

The Department shall submit its findings and recommendations to the Governor and the 1994 Session of the General Assembly in accordance with the procedures of the Division of Legislative Automated Systems for the processing of legislative documents.

WORKPLAN

RFP 93-23

A Study of the Feasibility of Implementing Statewide the
Fairfax County Elementary Foreign Language Immersion Program

Division Chief: Ken Magill

1. Team Leader

David Cox, Team Leader, Foreign Language Specialist, Adolescent
Education

Team Members

Martha Abbott, Foreign Language Specialist, Fairfax County
Judith Shrum, Foreign Language Department/School of Education,
Virginia Polytechnic Institute
Patty Pitts, Compliance - Teacher Certification
Helen Jones, Foreign Language Specialist, Early Childhood

Consultants/Reviewers

Helen Warriner-Burke, Former DOE Foreign Language Specialist
Charles Finley, Compliance - School Accreditation
Kathy Panfil, Principal, Key Elementary School, Arlington County

2. Implementation PlanDeliverables

- By July 1, 1993,
 - a/ Gather information and prepare summary of current status of elementary foreign language programs in Virginia;
 - b/ review and prepare summary of the Fairfax County Immersion Program, including student and program evaluation results;
 - c/ prepare summary of [1] staffing requirements for elementary immersion programs and [2] availability of in-state elementary foreign language teacher preparation programs;
 - d/ solicit and compile student enrollment criteria and curriculum-related information on the Fairfax County and other immersion programs;
- By August 1, 1993, complete summaries of fiscal, policy, and other implications related to the implementation of the immersion program statewide;
- By September 1, complete initial draft of document;
- By October 1, 1993 submit report of the study to the MCA;
- By December 1, 1993 submit report of the study to the General Assembly.

Approach

To determine the feasibility of statewide implementation of the Fairfax County Immersion program, as much information as possible will be gathered by the team about the program. A site visit is proposed. Of particular concern are the staffing, curriculum, policy and fiscal implications for an immersion program. A statewide survey of all LEA's to ascertain current elementary foreign language practices will be conducted. Information will be gathered also to determine to what extent the state's teacher preparation programs are prepared to meet the demands of a program such as this.

Individual team members will be charged with the responsibility for developing certain sections of the document. The final document will be reviewed by each team member as well as external readers/consultants.

3. BudgetTotal Requested StaffTeam Members

David Cox	.20
Helen Jones	.15
Patty Pitts	.10
Martha Abbott	--
Judith Shrum	--
	.45 FTE

Reviewers

Helen W-Burke
Charles Finley
Kathy Panfil

Total Requested Funds - \$1000

One overnight visit to Fairfax County for team members	\$500
Reimbursement for 2 one-day meetings in Richmond	\$100
Misc. Expenses	\$400

4. Timelines/Project Completion

See deliverables section for deadlines.

This project will be completed by December 1, 1993.

5. **Evaluation**

- The document or parts thereof will be reviewed periodically by the consultants/reviewer,
- Reaction by staff/s of the General Assembly will be solicited upon delivery of the report to the General Assembly.
- The process will be evaluated in terms of the team's ability to meet deadlines and complete the document as scheduled.

6. **Dissemination**

At the pleasure and expense of the General Assembly

VIRGINIA FOREIGN LANGUAGE ENROLLMENTS
Public Secondary Schools
1992-93

	EXPL	I	II	III	IV	V	VI	AP	TOTAL	%
SPANISH	2,444	43,158	28,273	18,712	4,416	741	49	1,558	99,351	57.0
FRENCH	1,758	17,124	11,878	8,796	2,689	885	59	1,015	44,204	25.3
LATIN	294	6,660	3,941	2,370	872	350	33	363	14,883	8.5
GERMAN	162	4,422	3,098	2,082	585	246	-	176	10,771	6.2
RUSSIAN	-	293	224	159	36	16	-	-	728	0.4
JAPANESE	-	439	208	148	20	-	-	-	815	0.5
ITALIAN	-	71	24	30	-	-	-	-	125	0.1
Intro. to FL	3,541	-	-	-	-	-	-	-	3,541	2.0
TOTAL	8,199	72,167	47,646	32,297	8,618	2,238	141	3,112	174,418	

Foreign Language Enrollments: 1983/84 - 1992/93
Percentages, Grades 8-12

	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93
SPANISH	54,365	69,573	77,464	78,654	79,921	82,504	84,917	90,185	96,567	99,351
FRENCH	40,283	48,074	51,423	51,031	48,091	46,663	45,862	45,918	45,501	44,204
LATIN	15,311	17,006	17,160	14,433	14,070	13,827	14,053	14,828	14,878	14,883
GERMAN	7,652	8,668	9,560	8,763	8,624	8,469	8,972	9,911	10,385	10,771
RUSSIAN	124	151	184	260	265	458	809	868	952	728
JAPANESE	-	-	24	39	61	280	379	480	643	815
ITALIAN	65	68	87	127	62	70	86	146	123	125
CHINESE	-	-	-	7	5	3	6	15	17	-
GREEK	-	-	-	-	-	11	-	2	-	-
Intro. to FL	3,847	2,241	3,274	3,160	2,750	2,616	2,572	3,195	3,505	3,541
TOTALS	121,647	145,781	159,176	156,474	153,849	154,901	157,656	165,548	172,571	174,418
	30%	36%	40%	40%	40%	42%	44%	45%	46%	46%

Virginia Department of Education, April, 1993

**Immersion Programs in Public Schools in the
Washington Metropolitan Area and Virginia
Status Report**

Information provided by the: **Center for Applied Linguistics**
1118 22nd Street, N. W.
Washington, DC 20037
(202) 429-9292
Attn: Nancy Rhodes

<u>School District</u>	<u>Data</u>	<u>Contact</u>
Montgomery Co., MD	Total immersion French and Spanish; started in 1974; grades K-6 with articulation to middle school; 16 teachers and 452 students. Also partial-immersion Spanish with 8 teachers and 250 students which began in 1983.	Miriam Met. Eileen Lorenz (301) 279-3440
Prince George's Co., MD	Total Immersion in 2 French Magnet Schools and one middle school; began in 1986 with federal funding; articulated with middle school; 22 teachers and 457 students.	Pat-Barr Harrison Marie-Gesille Desvet (301) 386-1519
District of Columbia	Partial-immersion Spanish in 2 schools; began in 1991; 12 teachers and 310 students; PreK-6.	Paquita Rollano (202) 673-1277
Alexandria City, VA	Partial-immersion Spanish in 1 school; began in 1991; 2 teachers and 38 students.	Ann Anderson (703) 824-6680
Arlington Co., VA	Partial-immersion Spanish in 3 schools; began in 1986; 18 teachers and 500 students; articulation with middle school.	Marcela van Vacano (703) 358-4213
Fairfax Co., VA	Partial-immersion French, Japanese, and Spanish in 10 schools; began in 1989; 36 teachers and 1,112 students. 10 are articulated with middle school.	Marty Apple Earl Kaye (703) 698-0400
Henrico Co., VA	Partial immersion in Spanish in one high school; began in 1993; 3 teachers; and 36 students.	Jane Cox (804) 226-3742
Prince William Co., VA	Immersion Spanish in one school; began in 1994.	Lore Bass (703) 441-8006

There are approximately 145 immersion schools in the United States.

Elementary (K-5) Foreign Language Programs, 1992-93

	FLEX	FLES	Partial Immersion	In-school	Before/ After Sch.	Summer	All Students	Selected Students
Alleghany Highlands Co.	.			.			.	
Amherst Co.	.				.		.	
Arlington Co.	.		.	.	.		.	
Bedford Co.	.	.		.	.		.	
Botetourt Co.	.				.		.	
Buchanan Co.	.			.				.
Carroll Co.		.		.			.	
Chesterfield Co.	.	.		.			.	.
Fairfax Co.	.		.	.			.	
Fauquier Co.	.			.			.	
Giles Co.	.					.		.
Hanover Co.		.		.			.	.
Henrico Co.	.			.			.	
Isle of Wight Co.	.			.				.
Lee Co.		.		.			.	
Loudoun Co.	.				.		.	
Pulaski Co.	.			.			.	
Roanoke Co.	.			.			.	
Rockbridge Co.		.			.			.
Rockingham Co.		.			.		.	
Russell Co.		.		.				.
Stafford Co.	.				.		.	
Surry Co.		.			.		.	
York Co.		.			.		.	
Alexandria Ci.			.	.			.	
Bristol Ci.		.		.				.
Chesapeake Ci.		.				.		.
Fredericksburg Ci.		.		.			.	
Harrisonburg Ci.	.				.		.	
Hopewell Ci.		.		.			.	
Lynchburg Ci.		.			.		.	
Newport News Ci.	.			.				.
Norfolk Ci.		.		.			.	
Norton Ci.	.			.			.	
Petersburg Ci.		.			.			.
Radford Ci.		.		.			.	
Richmond Ci.	.			.			.	
Roanoke Ci.		.		.			.	
Waynesboro Ci.	.				.		.	
Williamsburg / James City	.			.			.	
Virginia Beach Ci.	.	.			.	.	.	.
West Point	.			.				.
TOTALS	24	20	3	27	15	3	32	13

APPENDIX F

Partial-Immersion Foreign Language Pilot Program, Evaluation Report is a publication of the Fairfax County Public Schools and is available from Ms. Martha G. Abbott, Coordinator, Foreign Languages, Department of Instructional Services, Walnut Hills Center, 7423 Camp Alger Avenue, Falls Church, VA 22042 [703] 698-0400. The document provides detailed information about the county's immersion program. Individuals looking for additional information are encouraged to contact Fairfax County for a copy.

State-Approved Preparation Programs
in Foreign Languages

French (F), German (G), Greek (Gr), Italian (I), Latin (L),
Portuguese (P), Russian (R), Spanish (S)

Bridgewater College (F, G, S) [8-12]
Christopher Newport College (F, G, S) [NK-12]
 Clinch Valley College (F, S) [8-12]
Eastern Mennonite College (F, G, S) [NK-12]
 Emory and Henry College (F, G, L, S) [6-12]
 Ferrum College (F, R*, S) [7-12]
 George Mason University (F, G, L, S) [8-12]
 Hollins College (F, G, L, S) [8-12]
 James Madison University (F, G, L, R, S) [8-12]
 Liberty University (F, S) [K-12]
 Longwood College (F, G, S) [8-12]
 Lynchburg College (F, G, S) [8-12]
 Mary Baldwin College (F, S) [8-12]
 Mary Washington College (F, G, L, S) [6-12]
 Norfolk State University (F, S) [8-12]
 Old Dominion University (F, G, R, S) [7-12]
 Radford University (F, G, L, S) [9-12]
 Randolph-Macon College (F, G, L, S) [8-12]
 Randolph-Macon Woman's College (F, G, L, S) [8-12]
 Regent University (F, G, R, S) [6-12]
 Roanoke College (F, G, S) [8-12]
 Sweet Briar College (F, L, S) [8-12]
 The College of William and Mary (F, G, L, S) [8-12]
 University of Richmond (F, G, L, S) [8-12]
 University of Virginia (F, G, L, R*, S) [7-12]
 Virginia Commonwealth University (F, G, S) [8-12]
Virginia Tech (F, G, Gr, I, L, P, R, S) [K-12]
 Virginia Union University (F) [9-12]
 Virginia Wesleyan University (F, G, S) [7-12]

*Add-on Endorsement Only.

From State-Approved Preparation Programs For Instructional
Personnel in Virginia Colleges and Universities, Virginia
Department of Education, Richmond, 1990.

APPENDIX H

Institutions of Higher Education Surveyed in July, 1993,
Concerning Interest in and Capability to Train Students in
Immersion Practices

Bridgewater College
Christopher Newport College
Eastern Mennonite College
Emory and Henry College
Ferrum College
George Mason University
Hollins College
James Madison University
Liberty University
Longwood College
Lynchburg College
Mary Washington College
Old Dominion University
Radford University
Roanoke College
Virginia Tech